THE INDIA FORUM
A JOURNAL-MAGAZINE ON CONTEMPORARY ISSUES

September 15, 2020

Can Conventional Metrics of Employment be Accurate During a Lockdown?

By: PC Mohanan,Aloke Kar

Labour force surveys that yield estimates on job numbers are designed to capture work inputs in 'normal' situations. The concepts and methodology used can lead to errors in estimates during a lockdown when production has been completely or partially halted.

The Central Statistics Office's estimate of 23.9% contraction in the GDP in the first quarter (April-June) of 2020-21 showed the extent of disruption caused by the nation-wide lockdown imposed in end March. The lockdown was gradually lifted only from the middle of May onwards. Sector-specific lockdowns continue in the country and area-specific lockdowns are also periodically imposed in some states.

This has affected livelihoods and employment across the country. What has been the magnitude of resultant job losses? A few surveys like of the Centre for Sustainable Employment, Azim Premji University, have measured the employment impact of the lockdown. But, currently the only high frequency data on employment, reported regularly, are from the Centre for Monitoring Indian Economy (CMIE). The CMIE estimates from before the lockdown, during the complete lockdown and then with a gradual lifting of the lockdown are presented in Table 1

Table 1: CMIE Estimates of Unemployment Before, During and After the Lockdown

Month	Unemployment Rate (%)		
	India	Urban	Rural
Aug 2020	8.35	9.83	7.65
Jul 2020	7.40	9.37	6.51
Jun 2020	10.18	11.68	9.49
May 2020	21.73	23.14	21.11
Apr 2020	23.52	24.95	22.89
Mar 2020	8.75	9.41	8.44

Source: CMIE https://unemploymentinindia.cmie.com
(Accessed 10 September 2020)

The unemployment rates show a near three-fold jump in April, before steadily declining from June onwards to levels that are currently at pre-lockdown levels.

The concepts currently used in labour force surveys (LFSs) by government, autonomous and independent agencies have their limitations in assessing the impact of lockdowns on employment. The conventional measurement tools are formulated with reference to what is called the production boundary adopted in the universally accepted System of National Accounts (SNA) that are used to measure the size of an economy.[1] The SNA covers all economic activities, including household-based production, and it is a system for international comparability However, the employment numbers that come out from these LFSs are based on operational definitions. In a lockdown/partial lockdown situation, these employment estimates cease to represent the volume of production in the SNA sense.

Section 1 briefly describes the internationally accepted conceptual framework for measuring employment. Section 2 discusses the problems in using the existing tools and definitions in the present context where the Covid pandemic has forced a curtailment of economic activities in a variety of ways. An examination of some aspects of employment revealed by the Periodic Labour Force Survey (PLFS) of 2017-18 of the National Sample Survey Organisation (NSSO) suggests that the hours of work are a better measure of employment when there is a forced curtailment of activities to There is therefore a need for caution in interpreting the data now being published on employment and job losses.

1. Conceptual basis for measurement of employment

The overwhelming presence of informality in employment contracts and organisational structures in India has implications for how the tools of measurement we choose affect our understanding of the employment scenario in the country.

The starting point in defining work is the delineation of economic activities. The universe of economic activities is aligned with the general production boundary of the SNA. Work means engaging in economic activity which would include (i) all market activities performed for pay or profit that result in production of goods and services for exchange, and (ii) non-market activities. Included in non-market activities are (a) all the activities relating to agriculture, forestry, fishing, mining and quarrying sectors that result in production of primary goods for own consumption, (b) activities relating to the own-account production of fixed assets like construction of one's own house, tools, etc., and (c) all activities of the government and non-profit organisations serving households.

Thus, work is any activity to produce goods for own use or use by others, and to provide services for use by others, but it excludes activities that do not involve producing goods or services (e.g., begging and stealing), self-care (e.g., personal grooming and hygiene) and activities that cannot be performed by another person on one's own behalf (e.g. sleeping, learning and activities for own recreation).

> According to the methodology recommended by the ILO, the criteria to identify a person ... as employed is not whether she actually worked on the reference day, but whether she had a job on that day with any establishment owned by her or others.

Those engaged in 'work' falling within the SNA production boundary constitute the workforce or the category of employed persons. The category of persons called the labour force is derived by combining the workforce with the unemployed persons (i.e. those in search of 'work'). LFSs are conducted to estimate the size and structural parameters of the labour force. In these surveys, the characteristics of a workforce are estimated by collecting data on activities of persons who during a specified brief period, such as one week or one day, were either in paid employment (whether at work or with a job but not at work); or self-employment (whether at work or with an enterprise but not at work).

The CMIE closely follows the guidelines of the International Labour Organisation (ILO) in conducting their surveys on employment.

The CMIE defines an employed person as:

Any person who is engaged in any economic activity either on the day of the survey or on the day preceding the survey or is generally regularly engaged in an economic activity but did not work on any of these days only temporarily because of scheduled rest days, inability to work on these specific days for reasons such as illness, bad conditions that did not allow him to reach work, festivals or other contingencies or constraints. ("Unemployment Rate in India" – Definitions")

More detailed clarifications on various likely scenarios inter alia state that:

If a person has taken leave from work (whether paid or unpaid leave) where there is reasonable surety of going back to the work after the leave, then the person is considered employed on the day of absence from work… Businessmen of all kinds are always considered employed if their business is operative at the time of the survey. (ibid)

It is important to note here that off-duty employees of units temporarily that have been temporarily shut for maintenance or because of a strike are counted as workers. Extending the reasons for closure to include a lockdown, off-duty regular employees of units closed by administrative orders are likely to be included in the workforce. The self-employed owners of the temporarily-shut units, however, may get excluded from the workforce, if they report their units to be non-operative at the time of survey.

The NSS definition of employed is very close to that of CMIE, though the reference period differs. The PLFS is also designed in conformity with the guidelines of the ILO.

A person who had a job in an enterprise but did not work during the reference week due to sickness or other reasons is treated as employed. The same goes for regular salaried employees. For example, a government servant who is on extraordinary leave or has been suspended will be treated as a person who had regular salaried/wage employment and was expected to work but did not work. A self-employed person running his or her own account enterprise and could not work due to a strike or other disturbances is treated as

employed. The NSSO provides a separate code for such cases.

For casual workers this situation does not apply as the work status is decided on a day-to-day basis.

According to the methodology recommended by the ILO, the criteria to identify a person (other than casual workers) as employed is not whether she actually worked on the reference day, but whether she had a job on that day with any establishment owned by her or others. This is necessary to ensure inclusion of people whose absence from a job on the reference day may have been authorised according to the terms of employment or may have been voluntary with no adverse consequences for her continuance in the job. This instruction for the survey works fine in a normal situation, but not in abnormal situations.

Headcount of workers and volume of work

The practice of producing national work statistics is driven by two closely related but distinct objectives. One is to provide the basic data for measuring 'labour' as an input into the production processes of the economy and the other to gain insight into the size and composition of the people engaged in economic activities.

The original intent of the ILO while formulating the guidelines for conducting the LFSs was the latter to provide headcounts of the workers and, very often, the count of jobs they are engaged in. The PLFS of the NSSO has a provision for recording engagement in multiple jobs in the Current Weekly Status (CWS) section of the schedule of enquiry, with a maximum of two jobs in a day.[2] The statistics on employment based on headcounts and job-counts serve well for monitoring labour markets and promoting rights of workers, but they are not recommended by the 2008 SNA as an ideal measure of the volume of work.

> [A] person with a job attachment to a production unit that has been closed during lockdown is liable to be counted as a worker. Workers of units operating at a sub-normal level during a partial lockdown would also be included in the workforce.

The volume of work, termed as 'labour input' in the 2008 SNA, is a crucial element of the production-side of the macro-economic framework. The LFSs on households provide a few alternative measures of the labour input. Among these, the total number of hours actually worked by the workforce is the preferred one in the absence of data required for adjustment in the composition of the workforce by their qualifications and skill levels.

The 2008 SNA recommends the 'actual hours of work' contributing to production as a better measure of labour input in compiling national accounts. This is included as an item of data collection of surveyed individuals for each job reported in a day in the NSSO's PLFS. The number of person-days of work and number of jobs or their full-time equivalents, though not ideal, often serve as good proxies under normal circumstances.

But in situations such as the complete or partial lockdown we are now faced with, these measures can be misleading for two reasons.

One, a person with a job attachment to a production unit that has been closed during lockdown is liable to be counted as a worker. Two workers of units operating at a sub-normal level during a partial lockdown would also be included in the workforce.

These scenarios are discussed in some more detail in the next section.

2. Measuring employment during lockdown

The main feature of the complete/partial lockdown has been that it has placed restrictions on production of goods and services. The labour part of the production process was disabled or restrained. As per the data published by CMIE in early July in the report "Salaried jobs lag in June recovery", of the 122 million jobs lost in April (the month when a nationwide stringent lockdown was in place), 21 million came back in May. The report goes on to say that in June over 70 million jobs came back. In June therefore, the employment deficit compared to the 2019-20 average was estimated at around 30 million. Against an average employment of 404 million in 2019-20, employment in June 2020 was 374 million. Of the 70 million jobs that came back in June, 44.5 million were those of small traders and wage labourers. The report concludes that over 63% of the jobs that came back were of these essentially informal forms of employment.

Jobs lost and gained

Understandably recent discussions have also centred on jobs lost and then on jobs that came back. Generally, a job refers to a position and not to a person. However, in the LFSs, which are household surveys, the activity status of persons is recorded for the reference period. Based on these numbers of persons (not jobs), the headcount estimates of employment are usually generated. These estimates do not represent the number of jobs in place as an employed person is counted only once in the workforce, even if she reports engagement in more than one job during the reference period.

On the other hand, the data collected from establishments on the number of workers employed are about jobs.[3] Corresponding to each job/position there is a person attached. Clearly data collected from establishments can tell us about jobs lost when they report employing fewer persons now than before.

Counting regular employees and self-employed when production is suspended

The ILO does not recommend excluding a regular employee from the headcount of the workforce for "temporary absence", provided the person maintains a "job attachment" during the period of absence.

"Temporary absence" is when there is an expected absence of a short duration when there is a *continued attachment to the job*. A regular salaried / wage employee who was "not at work" during the reference period due to sickness or other reasons is considered to have a "job attachment" during her absence, even if without pay. "Other reasons" include those of a personal nature as well as a reduction or suspension of production activity of the employing unit. Thus, the person "not at work" during the short reference period is included in the workforce in the current weekly status (CWS) and current daily status (CDS) approaches used by the NSSO, but in estimating the labour input the period of "not at work" is excluded from the count of hours actually worked.

The headcounts of workers according to the CWS and CDS approaches cease to serve as approximate measures of the actual labour input when there is a complete suspension of production activity, as during the lockdown. The employees might not have lost their jobs, but there were actually no jobs since virtually all production activities had been suspended. Jobs exist as long as the enterprises are operating. The provision for counting those "not at work" (under the above conditions) in the workforce is made on the assumption that the production process has not stalled. This is not a valid assumption in an economy that has been locked down. Thus, the headcount estimates of the workforce, according to conventional survey methods, fail to reflect the situation in an economy during a complete lockdown.

> The continuing lockdowns with varying intensity & the restricted mobility have dampened economic activity across sectors. This is felt more in the micro & small enterprises in the services sector. This may not show up in open unemployment numbers.

Conventional LFS estimates made with the usual definitions and methodology may not provide estimates of jobs lost or unemployment in the present situation. A lockdown essentially means labour is forced to sit out involuntarily, even though the jobs exist. We might even say that the conventional definition of unemployment becomes meaningless as the persons are not in a position to work or allowed to seek work.

During a partial lockdown, most of the production units are permitted to operate only at sub-normal levels. Moreover, the environment of restricted movement prevents their customers from gaining physical access to the units (particularly applicable to peddlers, personal services, truckers, etc.), who are compelled to operate at sub-normal levels. In spite of the reduced output of these units, those engaged in production activities, mostly for shorter durations during a day, are included in the workforce. In such situations, too, the headcount measures fail to reflect the actual labour input and thus the actual level of performance of the economy. The headcount measures actually over-estimate the extent of employment during a partial lockdown.

The continuing lockdowns with varying intensity and the restricted mobility have dampened economic activity across sectors. This is felt more in the micro and small enterprises in the services sector. This may not show up in open unemployment numbers. One would expect the reopening of large and formal establishments to bring back regular employment. However there is a catch. As per the latest PLFS of NSSO, 70% of the regular wage/salaried workers had no written job contract, implying that there will be no formal termination of employment from the employee's perspective leading to a certain 'vagueness' in reporting their status. This could also lead to a further disconnect between the employment reported by establishments and by households.

Deconstructing the employment numbers

As was pointed out earlier, CMIE estimates do not represent the number of jobs in an economy; they are headcount estimates of employment and unemployment. These are generated with a day as reference period. There are certain implications of employing a reference period as short as a day.

Table 2 is compiled from PLFS 2017-18 and shows the effect of the length of the reference period on the headcount estimates of activity status under normal circumstances. It gives the percentage distribution of the population using three different reference periods, for three different statuses. The usual status (including both principal, and subsidiary status) estimates are based on data collected with a 365-day reference period, the CWS estimates with a seven-day reference period and the CDS estimates with a one-day reference period. All three are headcount estimates and together provides an idea of the employment scenario in normal circumstances.

> Without a valid estimate of the share of non-contributing workers in the headcount estimate of workers, gauging the impact of the lockdown on the economy ... is prone to erroneous interpretations.

The results reveal that the shorter the reference period the lower is the workforce participation rate and higher the unemployment-population ratio. The percentage shares of “not at work” are higher in the CDS than in CWS. Among the “not at work” category, the shares are higher for “other reasons” than for “sickness”. Further, the “not at work” for other reasons account for over 5% of the headcount of workers in the CDS approach, which is significantly higher than that (1.7%) in the CWS approach. Also most of those “not at work” for other reasons are self-employed workers.

Thus, under normal circumstances, 5% of the estimated workers are likely to be those who neither contribute to labour input nor actually participate in any production process on the reference day. During a lockdown , the percentage of non-contributing workers must be much higher and it is likely to fluctuate considerably with the changing stringency of the lockdown.

Table 2: Percentage distribution of persons by activity status with year, week and day reference periods
PLFS 2017-18

Activity Status	Status codes in PLFS	Usual status (ps+ss)	CWS	CDS
Own account worker	11	12.70	11.94	11.25
Employer	12	0.68	0.62	0.60
Worked as helper in household enterprise (unpaid family worker)	21	4.73	3.94	3.59
Worked as regular salaried/ wage employee	31	7.92	7.69	7.20
Worked as casual wage labour: in non-MGNREG public works	41	0.30	0.13	0.11
Worked as casual wage labour in MGNREG works	42	--	0.15	0.10
Worked as casual wage labour: in other types of public works	51	8.36	7.58	5.63
Did not work owing to sickness though there was work in household enterprise	61	--	0.07	0.13
Did not work owing to other reasons though there was work in household enterprise	62	--	0.40 (1.23)	1.01 (3.34)
Did not work owing to sickness but had regular salaried/wage employment	71	--	0.03	0.06
Did not work owing to other reasons but had regular salaried/wage employment	72	--	0.14 (0.43)	0.58 (1.91)
Workers	--	34.69	32.70 (1.67)	30.25 (5.25)
Unemployed persons	81 (& 82)	2.24	3.18	4.85
Out of labour force	91, 92, …	63.07	64.12	64.90
All persons	--	100.00	100.00	100.00

Source: Based on PLFS 2017-18
Note: (i) 'usual status ps+ss' stands for usual activity status considering principal and secondary activities.
(ii) The CDS estimates are obtained with the day before the data survey as the reference period, applying the 'priority' and 'major time' criteria.
(iii) Figures in parentheses are the percentage share of "not at work" for other reasons in count of workers.

Labour force surveys of the NSSO or CMIE also use an additional criterion for classifying as a 'worker' those not actually working on the reference day: the continued attachment to a job in a temporarily-closed unit because of "… maintenance or a labour strike…" On the reference day, a person found off-duty but attached to such a unit (i.e. having reasonable surety of continuing in the job) is considered employed if the workplace is expected to resume work within the next 15 days.

These expectation-based responses are likely to introduce a subjectivity in the numbers, affecting a comparison of CMIE's monthly estimates of workers. Without a valid estimate of the share of non-contributing workers in the headcount estimate of workers, gauging the impact of the lockdown on the economy in terms of the reduction in labour input, and, thus, of production is prone to erroneous interpretations.

Importance of data on hours actually worked for measuring labour input

The estimates of actually working individuals on a typical day of the survey reference period are not sufficient to measure the impact of the lockdown on the economy. As recommended in the 2008 SNA, a more direct approach for estimating labour input is collecting

data on number of hours actually worked. In the PLFS, the number of hours actually worked is collected for each job on each of the seven days preceding the date of survey. Estimates of average hours actually worked in Table 3 are derived from the data on activities carried out on the day before the survey.

Table 3: Average number of hours actually worked by a worker on a working day
PLFS 2017-18

Workers	Rural	Urban	All
Male	7.22	7.95	7.44
Female	6.07	6.51	6.19
All	6.97	7.66	7.18

An estimate of the labour input on a typical day of the survey reference period, measured in person-hours, can be derived as the product of the actual hours of work computed in Table 3 and the estimated number of workers. derived from the percentage share of contributing workers (sum of percentages for codes 11 to 51) on a typical day, according to CDS, in Table 2.

3. Conclusions

Quantifying the impact of the lockdown on the Indian economy requires that we assess the labour input into the production process. Estimates from surveys that use the standard conceptual framework to measure employment levels can be misleading. With varying degree of restrictions put on different kinds of production activities at various stages of the lockdown and "un-lockdown", the actual hours worked in a day vary over a wide range. Thus, the impact of the lockdown cannot be reliably estimated with the conventional tools used in most surveys. For that we need data on the number of hours actually worked during different phases of the lockdown.

The lockdown and the consequent changes in the nature of economic activities make the standard measures of employment and unemployment somewhat unsuitable. Similar problems can arise for other macro indicators like the price index where abrupt changes in consumption pattern can make the weights used for such indices inappropriate and the resulting indices misleading. Special caveats are necessary to avoid trends in many of the indicators being confused as green shoots or otherwise.

Footnotes:

1 The production boundary can be very loosely defined as covering all production of economic value. A definition can be found in this United Nations document (6.6): https://unstats.un.org/unsd/statcom/doc08/SNA-Chapter6.pdf

2 Evidently, with the provision of recording at the most two jobs in a day, the count of jobs is bound to be underestimated. For instance, regular wage/ salaried workers engaged in providing domestic services to households or those providing cleaning services to enterprises often have multiple job contracts. But, they constitute a very small proportion of workers.

3 The job-count estimates from enterprise surveys too tend to be on the lower side, as engagement of some kinds of casual workers tend to be unreported by their employers.